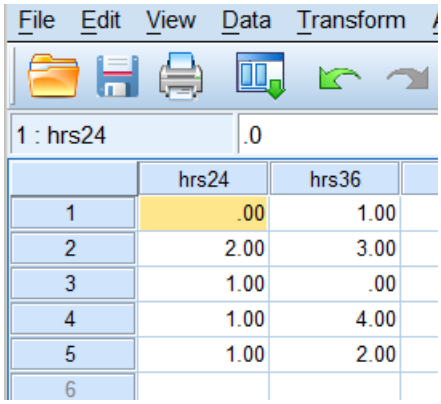
Psych./Neuro. 201: Statistics & Research Methods
SPSS Instructions for Correlated groups *t* test

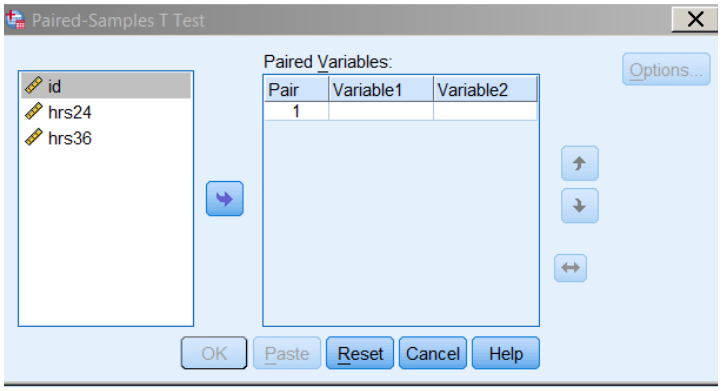
Example: Imagine that a researcher was interested in the effect of sleep deprivation on motor skills performance. Five participants were tested on a motor-skills task after 24 hours of sleep deprivation and again after 36 hours. The DV is the number of errors made on the motor skills task.

The data for this example appear below. Note how these data are entered differently from the way data are entered for an independent groups *t* test. In the repeated-measures case, each level of the IV is represented as a separate column.



	hrs24	hrs36
1	.00	1.00
2	2.00	3.00
3	1.00	.00
4	1.00	4.00
5	1.00	2.00
6		

To conduct a correlated groups *t* tests in SPSS, go under the "Analyze" menu to "Compare Means" to "Paired-Samples T Test." You will get a window similar to the following:



You then want to choose which variables to compare by clicking on them and putting them in the Paired Variables box (if you have multiple comparisons to make you can create multiple pairs of variables). Then click OK and you will get bumped to the output window where you can examine your findings (see reverse).

Descriptive statistics for the two levels of your IV:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	hrs24	1.0000	5	.70711	.31623
	hrs36	2.0000	5	1.58114	.70711

Ignore this table. It represents *r* values (correlations)

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	hrs24 & hrs36	5	.447	.450

This table provides you with the difference between the two means, the observed *t*, df, and *p*-value.

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 hrs24 - hrs36	-1.00000	1.41421	.63246	-2.75598	.75598	-1.581	4	.189

We see that the observed *t*, with 4 df, is -1.581, and the *p* value is .189. Since $p > .05$, this test is not statistically significant. If we *did* find a statistically significant *t*-value, then we would look at the means for the two conditions to determine the nature of the relationship. When you're writing the results of a correlated groups *t* test, be sure to include the *t* (rounded to two decimal places), df, *p* value, and the *M* and *SD* for each level of the IV. See p. 348 of your text for an example.

Important details for writing a Results section involving a correlated groups *t* test:

- You should italicize *M*, *SD*, *t*, and *p*.
- Current APA Style is to report the exact *p* value (e.g., $p = .004$) unless it is $< .001$.
- When $p > .05$, report that the difference was NONsignificant, not INsignificant.
- Round everything to 2 decimal places, except the *p* value, which can be up to 3 decimal places.